REMARKS

Regarding the rejections in items 6 and 7 of various claims for anticipation by Yajima, this referemce is concerned with bit synchronization, not with coherent receivers, and so is not relevant, as will now be explained in more detail. In Yajima there is disclosure of tracking an optimum phase during reception of a burst data set (para 0025). But this must be phase of the data relative to a data clock. Phase can be used to refer to phase of a data signal or phase of a carrier such as an optical carrier. These two types of phase should not be confused. In Yajima although there is mention of optical transmission, there is never any discussion of optical phase or phase of any other carrier. Optical phase is not relevant in nearly all current optical transmission systems which use direct detection and thus don't care about optical phase. Only in coherent receivers is the phase of the carrier relevant. As optical coherence is not mentioned in Yajima, there is no disclosure or suggestion in Yajima of optical phase or coherent receivers. In contrast, the present invention is concerned with coherent receivers.

The claims have now been clarified to make this distinction more explicit. The claims now recite the step or feature of coherently matching the reference signal with a received carrier. Furthermore, the claims now indicate that the reference signal has phase or polarization slip relative to the carrier. In Yajima, there is no such coherent matching, and the only reference signal is a reference clock which is used to synchronize the data, and would not be compared or matched to any carrier.

The claims now specify generating a set of detected data signals each associated with different states of the slip between the reference and the carrier, and determining which of them is associated with a current state of the slip, for use in selecting at least one of the set as a current output.

This enables the receiver to accommodate a reference which is not phase locked to the carrier and thus has less than ideal coherence in the form of the slip between the carrier and the reference. There is no suggestion of this in Yajima. Accordingly claim 1 is not anticipated by nor obvious over Yajima.

All the remaining claims have corresponding features or are dependent on such claims, and so are allowable for the same reasons.

In items 8 and 9 the Examiner cites Bar-David, but only as showing in-phase and anti phase matching, and so this does not affect the above arguments.

In item 10 Thesling is cited against dependent claims 6 and 7, but again this does not affect the above arguments.

In item 11, Dunning is cited against dependent claims 29 and 30, but again not affect the above arguments.

Regarding items 13 and 14, claim 4 refers to an in-phase datum representing the phase of the reference signal. This is shown by phase reference 350 in figure 3a. Claim 4 also refers to an anti-phase datum, which is shown by antiphase reference 352 in figure 3a. The Examiner has not explained what she regards as unclear about these terms in the claim. Without further explanation of the Examiner's view it is hard to know how to clarify these terms. Hence if this rejection is maintained, more explanation would be appreciated.

Regarding item 15, the Examiner indicates that claim 30 does not show how the selection of an output is made in synchronism with a level change in the input. This has now been amended to specify the selection is made in synchronism with a level change of one of the set of detected signals, based on the description at line 26 of page 15. Exactly how this is implemented is a matter of preference for those skilled in the art and the claim need not be limited to any one particular implementation.

The indication of allowable subject matter in items 16 and 17 is appreciated.

The distinctive features are clearly illustrated in the figures and associated description, so there is no new matter. For example Figure 2 shows a three way coupler 202 which can carry out the coherent matching of the input 206 with the reference 208. This outputs a set of optical signals associated with different phase slips, to converters 218, 220 and 222. These converters output electrical signals which represent the detected data without the optical carrier. Processing circuit 260 determines which of the electrical signals is associated with a current state of the slip, and controls by control line 261, a switch arrangement 230 to select one of the electrical signals as a current output.

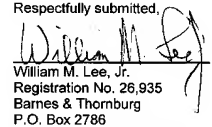
Accordingly, it is respectfully submitted that the drawings do show examples of all the structural detail essential for a proper understanding of the invention as set out in the clarified claims. The drawings are complete, and clearly show features to support steps of methods of receiving as well as receivers. Claim 39 relating to a program has been deleted as it does not explicitly recite the coherent matching.

Accordingly it is submitted that items 1 to 5 of the office action relating to the drawings no longer apply. If there are any further objections to the drawings, more explanation of exactly what is not shown clearly would be appreciated.

All the points raised by the Examiner have now been dealt with and favorable reconsideration is requested.

May 16, 2007

Respectfully submitted,



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